REMARKS

   Claims 2-7 and 9 are currently pending in the application. Applicant has canceled

claims 1 and 8 and amended claim 2. Applicant requests reconsideration of the application

in light of the following remarks.

Request to Admit the Amendment

   Applicant believes that the foregoing amendment presents the rejected claims in better

form for appeal. Pursuant to 37 C.F.R. § 1.116(a), Applicant requests the Examiner admit

the amendment. However, even if the Examiner decides not to admit the amendment under

37 C.F.R. § 1.116(a), Applicant respectfully requests the Examiner admit the amendment

pursuant to 37 C.F.R. § 1.116(b). The foregoing amendment is necessary to sufficiently

define the invention described in the present claims Upon these good and sufficient reasons

for why the amendment is necessary and was not earlier presented, Applicants request the

Examiner admit the amendment pursuant to either 37 C.F.R. § 1.116(a) or 37 C.F.R. §

1.116(b).

Rejections under 35 U.S.C. §103

   To establish a *prima facie* case of obviousness under 35 U.S.C. §103, three basic

criteria must be met. First, there must be some suggestion or motivation, either in the

references themselves or in the knowledge generally available to one of ordinary skill in the

art, to modify the reference or to combine reference teachings. Second, there must be a

reasonable expectation of success. Third, the cited prior art reference must teach or suggest

all of the claim limitations. Furthermore, the suggestion to make the claimed combination

and the reasonable expectation of success must both be found in the prior art, and not based upon the Applicants' disclosure. A failure to meet any one of these criteria is a failure to establish a *prima facie* case of obviousness. MPEP §2143.

Claims

Claims 2 and 8-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DeJaco (U.S. Patent No. 5,742,734, hereinafter "DeJaco"), in view of Malvar (U.S. Patent No. 6,029,126, hereinafter "Malvar"). Applicant respectfully traverses this rejection and requests reconsideration of the claims.

Independent claim 2 has been amended and dependent claim 8 has been canceled. Independent claim 2 is directed to a preprocessing method for preprocessing audio data before subsequent processing by a predetermined codec optimized for voice data, which is, for example, a conventional voice codec for wireless telephony. Ordinarily, if audio data other than voice data is encoded by such a voice codec, a substantial part of the non-voice audio data may be classified as noise by the conventional codec and may not be encoded properly. Since this type of codec optimized for voice data is widely used, it would be difficult to modify the existing conventional codec without massive modification, reprogramming and/or re-design. Instead, the present invention provides a solution to this problem by preprocessing the audio data so that the preprocessed audio data can be encoded properly by the conventional codec without requiring any modification to the codec. In other words, the present invention provides a "retrofit" type of technology that is compatible with existing predetermined codecs optimized for voice data. In doing so, the preprocessing of the present invention pre- performs a part of the conventional codec to decide (i) whether a frame will be encoded properly by the conventional codec and thus no preprocessing is necessary; or (ii) the frame will not be encoded properly by the conventional codec so that a preprocessing of the frame is necessary before subjecting the frame to the conventional

codec. The conventional predetermined codec has predetermined rate decision algorithm for classifying frames of the audio data into the noise data or the valid voice data and for deciding an encoding rate for encoding each frame of audio data. As recited in independent claim 2, before subjecting the audio data to the predetermined codec, an encoding rate for an audio data frame is decided by using the same rate decision algorithm as that of the predetermined codec, so as to select frames that would be classified as noise data and encoded at the lowest encoding rate if the frame is provided to and coded by the predetermined codec without any preprocessing. Energy of the selected frames are then adjusted to produce preprocessed frames of audio data that, if provided to the predetermined codec, are classified as valid voice data and encoded properly (i.e. at an encoding rate that is not the lowest encoding rate). Such preprocessed frames of data are provided to the predetermined codec. In the predetermined codec, the encoding rate of the preprocessed frame (and not the original frame before the energy adjustment) is decided by the predetermined rate decision algorithm for subsequent encoding process.

In this way, the same rate decision algorithm is used twice: (i) the rate decision algorithm is used for the original audio data during the preprocessing to decide which frames to adjust the energy thereof; and (ii) the algorithm is used for the preprocessed frames during the actual coding process. That is, for the preprocessing, a part of predetermined codec (rate decision algorithm) is preperformed to predict how each frame will be coded by the predetermined codec, and if it is found that the predetermined codec will not encode the frame properly, the frame is preprocessed to make a preprocessed frame that will be coded properly by the predetermined codec. In this way, the preprocessing causes the predetermined codec to classify the preprocessed frames of audio data as valid voice data instead of noise data. The ultimate result is to produce audio data that is higher quality than would ordinarily be produced by the predetermined codec.

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Applicant respectfully submits that DeJaco does not teach or suggest a method of preprocessing audio data by using the same rate decision algorithm as that of the predetermined codec before subjecting the audio data to the predetermined codec such that, in the overall system (including preprocessing and encoding), the rate decision algorithm is used twice.

Rather DeJaco only appears to disclose modifying the predetermined codec itself by inproving the encoding rate decision method/apparatus, which is a part of the predetermined codec. Thus, the encoding rate decision method itself should be improved and the improved method is used only once in the overall system.

By contrast, as claimed in the present invention, the rate decision result of the predetermined codec is affected by preprocessing audio data to be fed into the codec without any modification to the rate decision algorithm in the predetermined codec itself. Rather, the same rate decision algorithm is also used for the preprocessing to modify the audio data provided to the rate decision algorithm in the predetermined codec.

Malvar appears to simply describe automatic gain control without any detailed function, and does not teach or suggest analyzing audio data by using the rate decision algorithm of the predetermined codec, so as to select the frames that are classified as noise data if provided to the predetermined codec.

Applicant respectfully submits that even assuming arguendo, the combination of DeJaco and Malvar merely creates a modified predetermined codec with automatic gain control, which is distinguishable from the claimed invention which does not require any modification to the predetermined codec itself or rate decision algorithm in the predetermined codec, as previously discussed.

Accordingly, Malvar, alone or in combination with DeJaco, does not either teach or suggest a method of deciding audio data frames that would be classified and encoded as noise data by a predetermined codec optimized for voice (e.g., voice codec) by using rate decision algorithm of the predetermined codec and preprocessing such frames to cause the predetermined codec to classify the preprocessed audio data as valid voice data instead of noise data.

In addition, dependent claim 9 further recites that the computing system for preprocessing audio data is a separate system from the predetermined codec.

If an independent claim, such as claim 2, is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is also nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts, based on the arguments provided *supra*, that claim 9 is nonobvious.

Claim 3 was rejected under 35 U.S.C. ' 103(a) as being unpatentable over DeJaco (U.S. Patent No. 5,742,734, hereinafter "DeJaco"), in view of Malvar (U.S. Patent No. 6,029,126, hereinafter "Malvar") and further in view of Eryilmaz et al. (U.S. Patent No. 5,867,574, hereinafter "Eryilmaz"). Applicant respectfully traverses this rejection and request reconsideration of the claims.

Eryilmaz fails to overcome the deficiencies of DeJaco in view of Malvar. In addition, dependent claim 3 a silence frame is determined such that the energy of the silence frame is not adjusted in the adjusting step.

If an independent claim, such as claim 2, is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is also nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts, based on the arguments provided *supra*, that claim 3 is nonobvious.

Claim 4 was rejected under 35 U.S.C. ' 103(a) as being unpatentable over DeJaco (U.S. Patent No. 5,742,734, hereinafter "DeJaco"), in view of Malvar (U.S. Patent No. 6,029,126, hereinafter "Malvar") and further in view of Bhaskar et al. (U.S. Patent No. 7,013,269, hereinafter "Bhaskar"). Applicant respectfully traverses this rejection and requests reconsideration of the claims.

Bhaskar fails to overcome the deficiencies of DeJaco in view of Malvar. In addition, dependent claim 4 provides further detailed functions of the adjusting step.

If an independent claim, such as claim 2, is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is also nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts, based on the arguments provided *supra*, that claim 4 is nonobvious.

Claims 5-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DeJaco (U.S. Patent No. 5,742,734, hereinafter "DeJaco"), in view of Malvar (U.S. Patent No. 6,029,126, hereinafter "Malvar") and further in view of Bhaskar et al. (U.S. Patent No. 7,013,269, hereinafter "Bhaskar") in view of Claesson et al. (U.S. Publication No. 2003/0023429, hereinafter "Claesson"). Applicant respectfully traverses this rejection and requests reconsideration of the claims.

Claesson fails to overcome the deficiencies of DeJaco in view of Malvar and further in view of Bhaskar. In addition, dependent claims 5-7 provide further detailed functions of the adjusting step.

If an independent claim, such as claim 2, is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is also nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts, based on the arguments provided *supra*, that claims 5-7 are nonobvious.

Furthermore, it is difficult, if not impossible, to imagine how one skilled in the art in possession of these references could conceive of the present invention absent hindsight reconstruction which was prohibited by the Supreme Court in *Diamond Rubber Co. v. Consolidated Rubber Tire Co.*, 220 U.S. 428 435-436 (1911). To find obviousness, "there must be some reason for the combination other than the hindsight gleaned from the invention itself." *Interconnect Planning Corp. v. Feil*, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985). Stated in another way, "[I]t is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." *In re Fritch* 23 U.S.P.Q.2d 1780, 1784 (Fed. Cir. 1992).

Applicant respectfully submits that the combination of the references for the purposes of the present rejection is improper because of the failure of either patent to suggest the combination. It is a requirement that in making a combination of patents in a rejection, those patents must suggest the desirability of the combination of teachings. This requirement was expressed by the Court of Customs and Patent Appeals in In re Imperato, 179 U.S.P.Q. 730 where it stated:

"…the mere fact that those disclosures can be combined does not make the combination obvious unless the art also contains something to suggest the desirability of the combination."

Applicant respectfully requests that the obviousness rejections of claims 2-7 and 9 be withdrawn.

Regarding Doctrine of Equivalents

Applicant hereby declares that any amendments herein that are not specifically made for the purpose of patentability are made for other purposes, such as clarification, and that no such changes shall be construed as limiting the scope of the claims or the application of the Doctrine of Equivalents.

CONCLUSION

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

If any fees, including extension of time fees or additional claims fees, are due as a result of this response, please charge Deposit Account No. 19-0513. This authorization is intended to act as a constructive petition for an extension of time, should an extension of time be needed as a result of this response. The examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

Respectfully submitted,

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